

Supplementary Online Content

Lourenço BM, Fukusawa L, Moraleida F, et al. An internet-based pain education and exercise program for low- and middle-income individuals with chronic nonspecific low back pain: a mixed methods feasibility protocol

Supplemental material 1. Participant activity diary.

Supplemental material 2. Cost diary.

Supplemental material 3. Assessment of the resources used.

Supplemental material 4. Contraindications to Exercise Listed in ACSM Guidelines.

Supplemental material 5. Content of the health education program for patients with chronic non-specific low back pain.

Supplemental material 6. Exercises for patients with chronic non-specific low back pain.

Supplemental material 1. Participant activity diary.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Comments: _____
Week 1								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Week 2								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Week 3								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Week 4								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Week 5								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Week 6								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Week 7								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Week 8								

Supplementary material 2. Cost diary

Month _____

From ____/____/____ **until** ____/____/____

General practitioner

1. Did you consult a general practitioner during the past 30 days?

() No --> go to question 2

() Yes --> please fill out the following Table

Type of consultation	Number of consultations	Cost	Date
Practice visit			
Telephone consultation			
House call			

Please, if in person, write the address of the place you went to receive the service and what type of transport you used to get there.:

Others comments:

2. Did you visit an allied health professional during the past 30 days?

() No--> go to questions 3

() Yes --> Please fill out the following table

Allied health professional	Number of visits	Cost per visits	Date	Type of consultation
Physical therapist		R\$		
Occupational therapist		R\$		
Ceasar or Mesendieck therapist		R\$		
Chiropractor		R\$		
Manual therapist		R\$		
Phychologist		R\$		

Other,		R\$		
Other,		R\$		

Please, if in person, write the address of the place you went to receive the service and what type of transport you used to get there:

Others comments:

3. Did you visit a complementary care provider during the past 30 days?

() No--> go to questions 4

() Yes --> Please fill out the following table

Complementary care provider	Cost per visit	Number of visits	Date	Type of consultation
Acupuncturist	R\$			

Homeopath	R\$			
Holistic therapist	R\$			
Natural healer	R\$			
Other,	R\$			
Other,	R\$			

Please, if in person, write the address of the place you went to receive the service and what type of transport you used to get there:

Others comments:

4. How many times did you call in sick from work because of health problems during the past 30 days?

_____ times

Comments:

5. On how many working days did you call in sick from work because of health problems during the past three months?

_____ working days

Comments:

6. On a scale from 0 to 10 where 0 is the worst job performance anyone could have at your job and 10 is the performance of a top wonder, how would you rate your overall performance on the days you worked during the past three months?

Worst performanc e										Top performanc e
0	1	2	3	4	5	6	7	8	9	10

Comments:

7. Was your job performance adversely affected by health problems during the past 30 days?

☐ No

☐ Yes

Comments:

8. On how many days during the past three months did you perform paid work, although you were bothered by health problem?

Please do not count the days you did not work at all because you called in sick.

_____ days

Comments:

9. Please rate how well you performed on the days you went to work even though you were bothered by health problems during the past 30 days.

A 1 indicates a much worse performance than usual and 10 indicates that your work was not affected.

I was unable to work			I did more or less half of my usual work					My work was not affected	
1	2	3	4	5	6	7	8	9	10

Comments:

10. If you had to catch up on all the work you were unable to perform over the past 30 days because of health problems, how many hours of work would you be forced to make up?

Please do not count the days on which you did not work at all because you called in sick.

_____ days

Comments:

11. Days unable to perform usual activities (for example household activities)

_____ days

Comments:

12. Prescribed medication

Name	Dosage	Unities	Date

Comments:

13.1 Over-the-counter (OTC) medication

Name	Dosagem	Costs	Date
		R\$	
		R\$	

		R\$	
		R\$	
		R\$	

Comments:

13. Assistance

Assistance	Hours	Costs	Date
Assistance from family and friends		R\$	
Home help		R\$	
Domestic help		R\$	
Other,		R\$	

Other,		R\$	
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Comments:

14. Extra expenses, like adaptations at home, assistive devices (sort and costs)

15. Hospital

Hospital	Hours	Costs
Date of admission		R\$
Date of discharge		R\$
Ward		R\$

Other,		R\$
		R\$

Name of hospital:

16. Exams carried out.

Exams	Date	Costs	Where it was held.
		R\$	
		R\$	
		R\$	
		R\$	

Please, write the address of the place you went to receive the service and what type of transport you used to get there:

Others comments:

17. Transport, list the expenses you incurred with transportation related to your health conditions. (Example: going to the pharmacy to buy medication).

Supplemental material 3. Assessment of the resources used.

Resource type	Assessment tool	Assessment method	Sources consulted
Physical therapy sessions	Physical therapist report	Wage rates	Physical therapy board fee schedule
Medications, visits to doctors and/or health professionals of the public and private health systems, hospital stay, visits to emergency medical services	Questionnaires every 30 days	Published prices (costs for public and private health systems) and/or actual costs to participants	Pharmaceutical websites and medical services fee schedule
Visits to community or alternative services or alternative health professionals (e.g., gym)	Questionnaires every 30 days	Actual costs to participants	Health services fee schedule
Productivity (assessed for hours of lost work and loss of productivity)	Questionnaires every 30 days	Average wage in the state of Fortaleza per hour for women and men	Brazilian Institute of Geography and Statistics website
Transport, public or private, for the use of each resource	Questionnaires every 30 days	Values of bus and subway tickets and fuel in the year in the state of Fortaleza	Sptrans, metrop, national agency for oil, natural gas and biofuels websites

Supplemental material 4. Contraindications to Exercise Listed in ACSM Guidelines.

CONTRAINDICATIONS TO THE EXERCISE TEST	
ABSOLUTE	
☐	A recent significant change on the resting electrocardiogram (ECG) suggesting significant ischemia, recent (within 2 days) myocardial infarction, or other acute cardiac event
☐	Unstable angina
☐	Uncontrolled cardiac arrhythmias causing symptoms or hemodynamic changes
☐	Severe symptomatic aortic stenosis
☐	Uncontrolled symptomatic heart failure
☐	Acute pulmonary embolism or pulmonary infarction
☐	Acute myocarditis or pericarditis
☐	Known or suspected dissecting aneurysm
☐	Acute systemic infection, accompanied by fever, body aches, or swollen lymph nodes
RELATIVE (must consult a doctor before participating)	
☐	Stenosis of the left main coronary artery
☐	Moderate stenotic valvular heart disease
☐	Electrolyte abnormalities (eg, hypokalemia or hypomagnesemia)
☐	Severe arterial hypertension (ie, systolic blood pressure [SBP] of ≥ 200 mm Hg and/or diastolic BP [DBP] of ≥ 110 mm Hg) at rest
☐	Tachydysrhythmia or bradydysrhythmia
☐	Hypertrophic cardiomyopathy and other forms of outflow tract obstruction
☐	Neuromotor, musculoskeletal, or rheumatoid disorders that are exacerbated by exercise
☐	High-degree atrioventricular block
☐	Ventricular aneurysm
☐	Uncontrolled metabolic disease (e.g., diabetes, thyrotoxicosis, or myxedema)
☐	Chronic infectious disease (eg HIV)
☐	Mental or physical disability that leads to the inability to exercise properly

Supplemental material 5. Content of the health education program for patients with chronic non-specific low back pain.

Week	Topic
	Acceptance:
1	<i>Learning to deal with pain; Seek treatment.</i>
	Data on chronic pain:
2	<i>Show that many people live with chronic pain; Learn about chronic pain and possible consequences</i>
	Neuroscience of pain:
3	<i>Discuss aspects related to pain.</i>
	Influence of sleep on pain:
4	<i>Discuss strategies for better sleep quality.</i>
	Psychological aspects and pain:
5	<i>Discuss how fear, anxiety, depression, anger, sadness and stress can influence pain.</i>
	Increasing Positive Lifestyle Coping::
6	<i>Set goals with objectives to improve my health condition.</i>
	Exercises:
7	<i>Starting to move means changing habits</i>
	Communication:
8	<i>Show that pain can influence interpersonal relationships</i>
	Prevention:
9	<i>Reinforce all health education to reduce the severity of a new episode of pain.</i>

Supplemental material 6. Exercises for patients with chronic nonspecific low back pain.
EXERCISE WORKBOOK – WEEK 1

1 - STATIONARY GEAR



Series: 1

Rep: 2 minutes

You should move your feet and arms as if you were walking, but without moving in place.

2 - ISOMETRIC BRIDGE



Series: 3

Repetitions: 20 seconds

Lie down on a hard place and bend your legs. Lift your butt off the floor, keeping your feet supported.

3 - MINI SQUATS



Series: 3

Reps: 12

Make the movement of sitting on a chair. You don't need to squat too much, the important thing is not to bring your knees in front of your toes.

4 - THIGH FLEXION

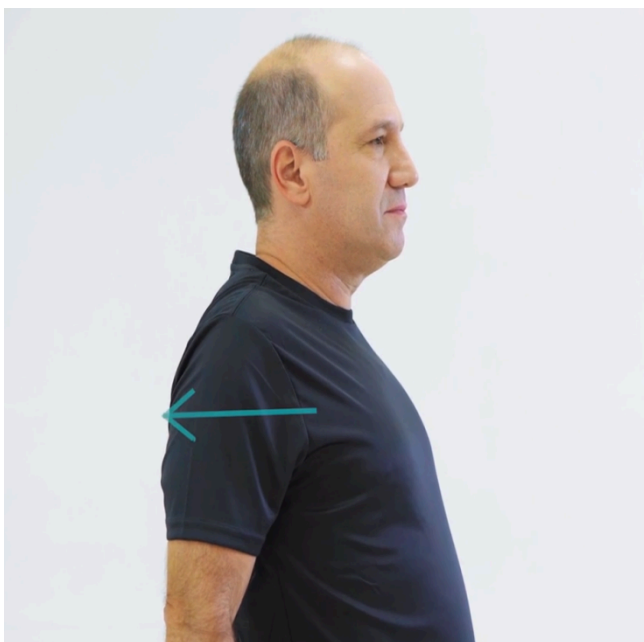


Series: 3

Reps: 12

Raise the knee of one of your legs and then return without touching the floor.

5 - SCAPULAR ACTIVATION



Series: 3

Reps: 30

With your arms down, move your shoulders and take your shoulder blades back, as if you wanted to touch them, and then upward, lifting your shoulder.

6 - TANDEM POSTURE



Series: 3

Repetitions: 20 seconds

Standing, place one foot in front of the other. Stay in the position for 20 seconds and then switch feet.

7 - FEET TOGETHER



Series: 3

Repetitions: 20 seconds

Put your feet together and hold the position for 20 seconds. Do the series 3 times.

8 - STRETCHES



Series: 3
Repetitions: 40 seconds



Series: 3
Repetitions: 40 seconds



Series: 3
Repetitions: 40 seconds



9 - SELF-MASSAGE



Series: FREE
Replays: FREE

Do self-massage to cool down your muscles. Do not put too much pressure on your fingers and



**repeat the movements for as long
as necessary**

EXERCISE WORKBOOK – WEEK 2

1 - STATIONARY GEAR



Series: 1

Reps: 2 minutes

Move your feet and arms as if you were walking, but without moving in place.

2 - CERVICOTHORACIC MOBILITY



Series: 1

Reps: 20

With your arms in front of your body, rotate your torso, moving your fingertips to the side. Rotate 10 times each side.

3 - ISOMETRIC BRIDGE



Series: 3

Repetitions: 30 seconds

Lie down on a hard place and bend your legs. Lift your butt off the floor, keeping your feet supported.

4 - MINI SQUATS



Series: 3

Reps: 12

Make the movement of sitting on a chair. You don't need to squat too much, the important thing is not to bring your knees in front of your toes.

5 - OYSTER EXERCISE



Series: 5

Reps: 12

Open the top leg like a shell. You will raise your leg and then lower it without touching your knees.

6 - TANDEM POSTURE



Series: 3

Repetitions: 20 seconds

Standing, place one foot in front of the other. Stay in the position for 20 seconds and then switch feet.

7 - FEET TOGETHER



Series: 3
Repetitions: 20 seconds

Put your feet together and hold the position for 20 seconds. Do the series 3 times.

8 - STRETCHES

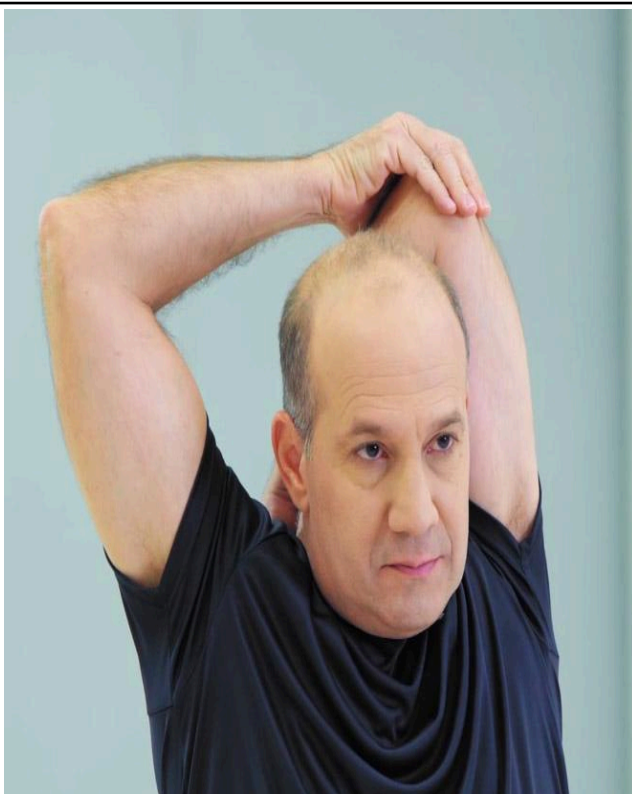


Series: 3
Repetitions: 40 seconds



Series: 3
Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds



9 - BREATHING EXERCISE



Series: FREE

Replays: FREE

Feel your chest filling with air and releasing. Breathe in for a count of 3 and release for a count of 3.

EXERCISE WORKBOOK – WEEK 3

1 - MILITARY MARCH



Series: 1

Reps: 2 minutes

Start walking. Raise your knees to waist height. Do this for 2 minutes.

2 - BRIDGE EXERCISE



Series: 3

Reps: 12

Lie down on a hard place and bend your legs. Lift your butt off the floor, keeping your feet supported. Go up and down using the movement.

3 - OYSTER EXERCISE



Series: 5

Reps: 12

Lie on your side and bend your legs, keeping your feet together during the movement.

4 - SQUATS WITH RANGE



Series: 3

Reps: 12

With your legs slightly open, squat down and use your arms to pick up a box on the floor. After descending, raise your body and stretch your arms upwards.

5 - ARM LIFT



Series: 3

Reps: 12

Let's move our arms doing a diagonal raise. The arms are positioned between your front and side. Perform the movement with your thumbs up.

6 - TANDEM POSTURE



Series: 3

Repetitions: 20 seconds

Standing, place one foot in front of the other. Stay in position.

7 - TIP OF TOES



Series: 3

Repetitions: 20 seconds

Now keep your feet close together and stand on your toes.

8 - STRETCHES



Series: 3

Repetitions: 40 seconds



Series: 3
Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds



9 - SELF-MASSAGE



Series: FREE

Replays: FREE

Do self-massage to cool down your muscles. Don't put too much pressure on your fingers and repeat the movements for as long as necessary.



EXERCISE WORKBOOK – WEEK 4

1 - MILITARY MARCH



Series: 1
Reps: 2 minutes

Start walking.
Raise your
knees to waist
height.

2 - CAT EXERCISE



Series: 1
Reps: 20
In a
comfortable
place, stand on
4 supports.
Curve your
spine upwards
then curve your
spine
downwards.

3 - BRIDGE EXERCISE



Series: 3

Reps: 12

Lie down on a hard place and bend your legs. Lift your butt off the floor, keeping your feet and back supported. Go up and down using the movement.

4 - TRICEPS SURAL



Series: 3

Reps: 12

Start standing, with your legs together and knees straight. Stand on your toes and then come back without touching your heels to the floor.

5 - SIDE SLR



Series: 3

Reps: 12

Stand with your hands on your hips and open one of your legs, like a straight leg kick to the side.

6 - SQUATS WITH RANGE



Series: 3

Reps: 12

With your legs slightly open, squat down and use your arms to pick up a box on the floor. After descending, raise your body and stretch your arms upwards.

7 - TANDEM POSTURE



Series: 3

Repetitions: 20 seconds

Put one foot in front of the other. Stay in the position for 20 seconds and then change.

8 - TIP OF TOES



Series: 3

Repetitions: 20 seconds

Keep your feet close together and stand on their toes.

9 - STRETCHES



Series: 3

Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds



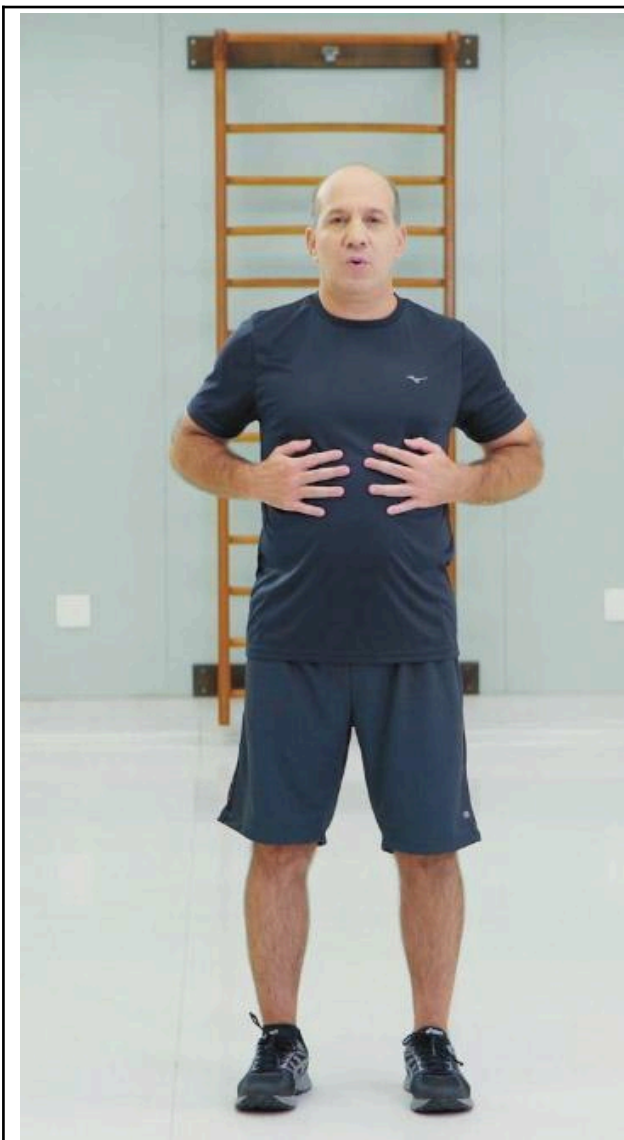


Series: 3

Repetitions: 40 seconds

10 - BREATHING EXERCISE

Series: FREE



Replays: FREE

Feel your chest filling with air and releasing. Breathe in for a count of 3 and release for a count of 3.

APOSTILA DE EXERCÍCIOS – SEMANA 5

1 - SIDE MARCH



Series: 1

Reps: 2 minutes

We will take side steps. Take 5 steps one way and 5 the other.

2 - CAT EXERCISE



Series: 1

Reps: 20

In a comfortable place, stand on 4 supports. Curve your spine upwards then curve downwards.

3 - SUPERMAN



Series: 3

**Reps: 30 seconds
(each side)**

**Start on 4 supports
in a comfortable
location.**

**Stretch one leg and
the arm on the
opposite side.**

**Maintain the
position with your
thumbs up and
your limbs straight.**

4 - SIDE SLR



Series: 3

Reps: 12

**Stand with your
hands on your hips
and open one of
your legs, as if you
were kicking
something to the
side. Be careful not
to lean your torso
too much.**

5 - GO UP AND DOWN STEPS



Series: 3

Reps: 30

Let's go up and down a step with alternating legs.

6 - SHOULDER LATERAL ROTATORS



Series: 5

Reps: 12

Lie on your side and rest your arm on your body with your elbow bent. Raise your hand as if you were going to open a door. Do not remove your elbow from your body.

7 - WALK ON YOUR TOES



Series: 3

Repetitions: 20 seconds

Stand on your toes and walk for 20 seconds.

8 - UNIPODAL TRAINING



Series: 3

Repetitions: 20 seconds

Keep your feet together and lift one of them off the floor. Hold the position for 20 seconds and switch to the other.

9 - STRETCHES



Series: 3

Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds

10 - SELF-MASSAGE



Series: FREE

Replays: FREE

Do self-massage to cool down your muscles. Don't put too much pressure on your fingers and repeat the movements for as long as necessary.



EXERCISE WORKBOOK – WEEK 6

1 - MINI SQUATS



Series: 1

Reps: 20

You should squat and stand up, as if you were going to sit in a chair.

2 - SUPERMAN



Series: 3

**Reps: 30 seconds
(each side)**

Let's do stabilization exercises. Start on 4 supports in a comfortable location. Stretch one leg and the arm on the opposite side. Maintain the position with your thumbs up and your limbs straight.

3 - SCAPULAR CONTROL



Series: 5

Reps: 12

Place your arms at shoulder height, with your elbows bent. Raise both arms, stretching and finding your hands above.

4 - KICKBACK EXERCISE



Series: 3

Reps: 12

Stand on 4 supports in a comfortable place. Support your elbows and lift one of your legs backwards, as if you were kicking in the air and returning without touching the ground.

5 - GO UP AND DOWN STEPS



Series: 3

Reps: 30

Let's perform the exercise by going up and down a step with alternating legs.

6 - DEEP SQUAT



Series: 3

Reps: 12

Place one of your legs behind you and squat as if picking up something next to you on the floor.

7 - WALK ON YOUR TOES



Series: 3

Repetitions: 20 seconds

Stand on your toes and walk for 20 seconds. We will do the series 3 times.

8 - UNIPODAL TRAINING



Series: 3

Repetitions: 20 seconds

Now, keep your feet close together and lift one of your feet off the floor. Maintain your balance and hold position for 20 seconds.

9 - STRETCHES



Series: 3
Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds

10 - BREATHING EXERCISE

Series: FREE



Replays: FREE

Feel your chest filling with air and releasing. Breathe in for a count of 3 and release for a count of 3.

EXERCISE WORKBOOK – WEEK 7

1 - SEMI SQUAT SIDE WALK



Series: 1

Reps: 20

Do the squat and stay in the semi-squat position. Take 5 steps to one side and then the other.

2 - UNIPODAL BRIDGE



Series: 3

**Reps: 15
seconds
(each side)**

Perform the bridge movement and when your hips are raised, straighten one of your legs. Then go back and do it with the other leg.

3 - VENTRAL PLANK



Series: 3

Reps: 15 seconds

Turn over onto your stomach and place the tips of your feet and elbows on the floor, pull in your belly, keeping your body straight and aligned without touching your torso to the floor.

4 - PEDALING LYING DOWN



Series: 4

Reps: 30

Lie on your back, stretch one of your legs. Do the pedaling movement. When you stretch one of your legs, bend the other and alternate the movement.

5 - DEEP SQUAT



Series: 3

Reps: 12

Place one of your legs behind you and squat as if picking up something next to you on the floor.

6 - SCAPULAR CONTROL



Series: 5

Reps: 12

Standing, place your arms at shoulder height, with your elbows bent. Raise both arms, stretching and finding your hands above.

7 - FLEXION ON 4 SUPPORTS



Series: 3

**Repetitions: 20
seconds**

Stand on all fours and spread your arms a little. Perform the arm flexion movement, bending your elbows and bringing your chest close to the floor. Return to position.

8 - WALK ON YOUR TOES



Series: 3

Repetitions: 20 seconds

Stand on your toes and walk for 20 seconds. We will do the series 3 times.

9 - UNIPODAL TRAINING WITH EYES CLOSED



Series: 3

Repetitions: 20 seconds

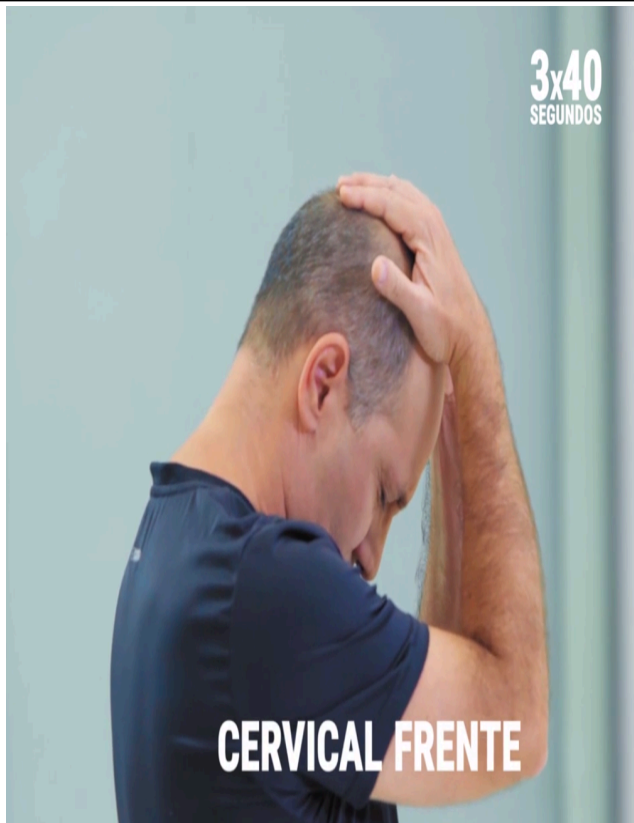
Keep your feet close together, lift one foot off the floor and close your eyes. Keep the balance.

10 - STRETCHES



Series: 3

Repetitions: 40 seconds



Series: 3
Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds



11 - SELF-MASSAGE



Series: FREE

Replays: FREE



Do self-massage to cool down your muscles. Don't put too much pressure on your fingers and repeat the movements for as long as necessary.

EXERCISE WORKBOOK – WEEK 8

1 - FREE SQUAT



Series: 1

Reps: 20

Make the movement of sitting on a chair.

2 - UNIPODAL BRIDGE



Series: 3

Reps: 15 seconds (each side)

Lie down on a hard place and bend your legs. Before lifting your butt off the floor, stretch one of your legs at knee height. Now, standing on just one leg, lift your butt off the floor and hold.

3 - VENTRAL PLANK



Series: 3

Reps: 15 seconds

Now, turn over onto your stomach and place your toes and elbows on the floor.

Tuck your belly in, keeping your body straight and aligned without touching your torso to the floor.

4 - PEDALING LYING DOWN



Series: 4

Reps: 30

Lying on your back, stretch one of your legs. Do the pedaling movement. When you stretch one of your legs, bend the other and alternate the movement.

5 - ADVANCE SQUAT



Series: 3

Repetitions: 10 steps

Perform squats by taking steps forward. Advance slowly, don't let your knee go beyond your feet.

6 - WALK ON YOUR TOES



Series: 3

Repetitions: 20 seconds

Stand on your toes and walk for 20 seconds. We will do the series 3 times.

7 - UNIPODAL TRAINING WITH TORSO SHIFTING



Series: 3

Repetitions: 20 seconds

Keep your feet close together and lift one of them off the floor. Make the movement as if you were going to reach for something in front of you and then return, leaning your body back.

8 - STRETCHES



Series: 3

Repetitions: 40 seconds



Series: 3
Repetitions: 40 seconds





Series: 3
Repetitions: 40 seconds



9 - BREATHING EXERCISE



Series: FREE

Replays: FREE

Feel your chest filling with air and releasing. Breathe in for a count of 3 and release for a count of 3.